

**ACDC AT 36TH STREET  
(CUDIA CITY WASH BASIN)  
FCD GAGE ID# 4808**

**STATION DESCRIPTION**

**LOCATION** – The gage is located on the left bank of the sediment pool where Cudia City Wash enters the Arizona Canal Diversion Channel (ACDC) (start of ACDC.) The gage is northwest of the intersection of Camelback Road and 40th Street. Located at Latitude N 33° 30' 49.5"; Longitude W 111° 59' 58.9". Located in SE1/4 SE1/4 S13 T2N R3E in the Paradise Valley 7.5-minute USGS quad map.

**ESTABLISHMENT** – The gage was installed on February 24, 1994.

**DRAINAGE AREA** – 4.82 mi<sup>2</sup>

**GAGE** – The gage is a pressure transducer type instrument with the diaphragm at 0.12 feet gage height relative to the culvert invert of the low flow sediment basin outlet at 0.00 feet gage height, levels of December 26, 1996.

The staff gage reads in gage height.

Two crest gages are on site.

CSG#1 (Lower) has pin elevation 1.98 feet gage height.

CSG#2 (Upper) has pin elevation 6.03 feet gage height.

**ZERO GAGE HEIGHT** - The invert of the outlet of the basin to the ACDC is the zero elevation. Elevation 1,235.95 feet M.S.L.

**HISTORY** – Pressure transducer installed February 24, 1994. Two crest stage gages and 0-5 foot enamel staff plate installed March 1997.

**REFERENCE MARKS**

RM1 – brass tablet, COE Cudia #3, on north bank of basin. Elevation 1,251.58 feet MSL or 15.63 feet gage height.

RP1 – Culvert invert has elevation 1,235.95 feet MSL, or gage height 0.00 feet. (Design has invert at 1,236.00 feet.)

**CHANNEL AND CONTROL** – The control is a 36-inch pipe up to gage height 7.00 feet, after which flow begins over a 200-foot wide sharp-crested weir.

**RATING** – The current rating is Rating #1 and is dated February 24, 1994. The rating is a combination of an HY8 culvert analysis for culvert flows and weir equation solution for flow over the weir.

**DISCHARGE MEASUREMENTS** – Generally not possible. Very difficult and dangerous for most or all flows.

**POINT OF ZERO FLOW** – The PZF is the invert of the culvert outlet of the basin to the ACDC at gage height 0.00 feet.

**FLOODS** – A peak discharge of 324 cfs occurred on July 14, 1999.

**REGULATION** – The sediment basin regulates flows of Cudia City Wash.

**DIVERSIONS** – None known

**ACCURACY** – Fair – weir equation in question. Verification with measurement if possible.

**JUSTIFICATION** – Monitor inflows in the upper ACDC.

**UPDATE**        August 19, 2010  
                         DE Gardner